1970) and was reported in varying numbers at Lake Jandabup by Storr et al. (1978). On the other hand this *Utricularia* species may have been at Lake Jandabup a long time (but unreported) as it is only noticeable when it flowers, and it has a small flower, difficult to notice even when one knows it is present. At the time of Marchant's survey of the lake (4 December, 1976) the sand spit where it flowers was under 30-40cm of water, and there would have been no sign of the species.

Description of *Utricularia dichotoma* from Lake Jandabup

Plant growing submerged in water, or on damp sand, anchored in the sand. Leaves basal, linear and pointed, up to 12mm long, expanded to a 1mm wide blade, accompanied by threadlike stems, some of them bearing bladders. Bladders large (1-1.5mm diameter). Bracts, 3 in whorl, shortly spurred. Scapes 1-1.5mm diameter, 80-140mm tall, bearing one or two terminal flowers. Flowers purple on short pedicles (3-5mm). Calyx lobes ovate. Upper corolla lobe small (1-2mm), purple, contracted at base, and a shortly 2 lobed. Lower lip broad (5-10mm across) and entire. Palate yellow, prominant. Spur shorter than lower lip. Habitat: open sand bank and shallow water (10-15mm depth) on SE edge of Lake Jandabup. Flowers after water level recedes, December to March.

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BALLISTOCHORY (EXPLOSIVE SEED DISPERSAL) IN *BAXTERIA* R. BR. (XANTHORRHOEACEAE)

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ABSTRACT

Baxteria australia is unique amongst the Western Australian Xanthorrhoeaceae in having active ballistochory as a seed dispersal mechanism.

INTRODUCTION

Baxteria R. Br. is a monotypic genus endemic to southern Western Australia. It's taxonomic placement is obscure, and although currently placed in the Xanthorrhoeaceae, it does not appear closely related to any other genus placed in this family, nor to any genus in the Liliaceae. The sole species has recently been considered as forming a separate family (Chanda and Ghosh, 1976), however for purposes of this paper it is retained in the Xanthorrhoeaceae.

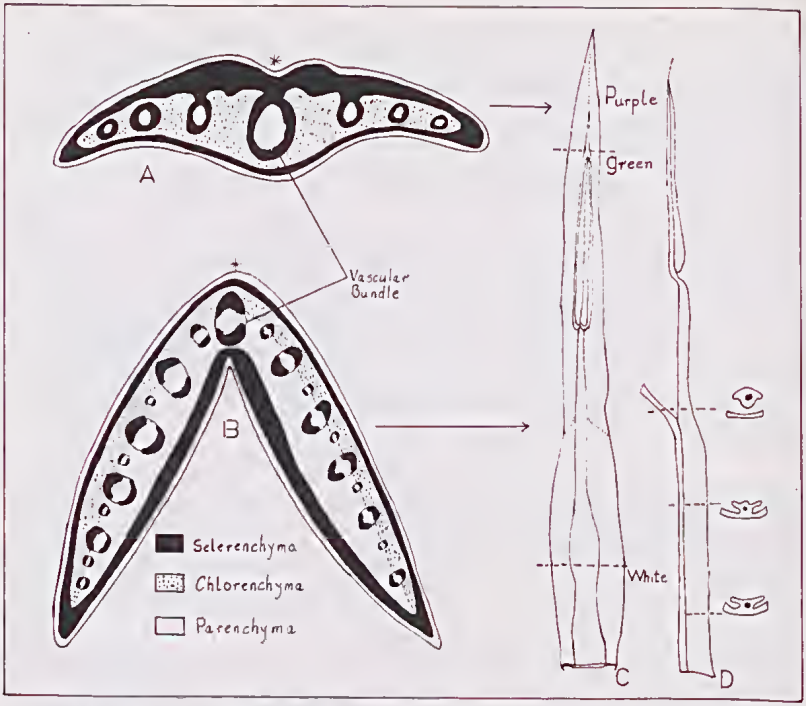

Figure 1: Perianth of *Baxteria australis*
A: T.S. of tepal near tip (* adaxial surface - outer).
B: T.S of tepal near Mid point (* adaxial surface).
C: Tepal showing colour and stamen.
D: Side view of stamen, showing degree of fusion to tepal.

DISTRIBUTION

Baxteria australis R. Br. is found in the lower southern coastal regions of Western Australia, between Capel and Albany (Keighery, 1981). Within this region *Baxteria* occurs on low lying, generally grey or black peaty sands, which are frequently water logged in winter. Although occasional populations can be located on higher grey sandy soils in surrounding Jarrah/Marri forest. Associated vegetation types (after Smith, 1972) are sedgelands, with plants also found in surrounding low or low open woodlands (Banksia Jarrah/Marri or Jarrah/Banksia). Frequently one finds other members of the Xanthorrhoeaceae (*Dasypogon, Kingia* and *Xanthorrhoea*) in the same habitat.

This region receives over 1000mm of rain per year and has a growing season of 7-8 months. Despite its apparent xerophytic nature, *Baxteria* is confined to the highest rainfall region of southern Western Australia.

FLOWERING

Flowering commences in November and extends to January (occasional plants in flower can be located in February). One to eight individual flowers are borne per tussock, in the axils of the leaves (flowers are considerably shorter than the leaves). Flowering is considerably enhanced and synchronised following fire.

The mature flower (Fig. 2a) is purple in colour (Fig. 1c). Each tepal is extremely rigid due to a large amount of sclerenchyma (Fig. 1a & b) which is unknown in any other Western Australian liliaceous flower.

Flowers possess a sickly sweet musty odour (which has been likened to bad meat). Despite considerable study the pollinator remains elusive, but is likely to be a carrion fly. Usually only 1-2 flowers are open per tussock at any time during flowering. The flower is protandrous and remains receptive for several

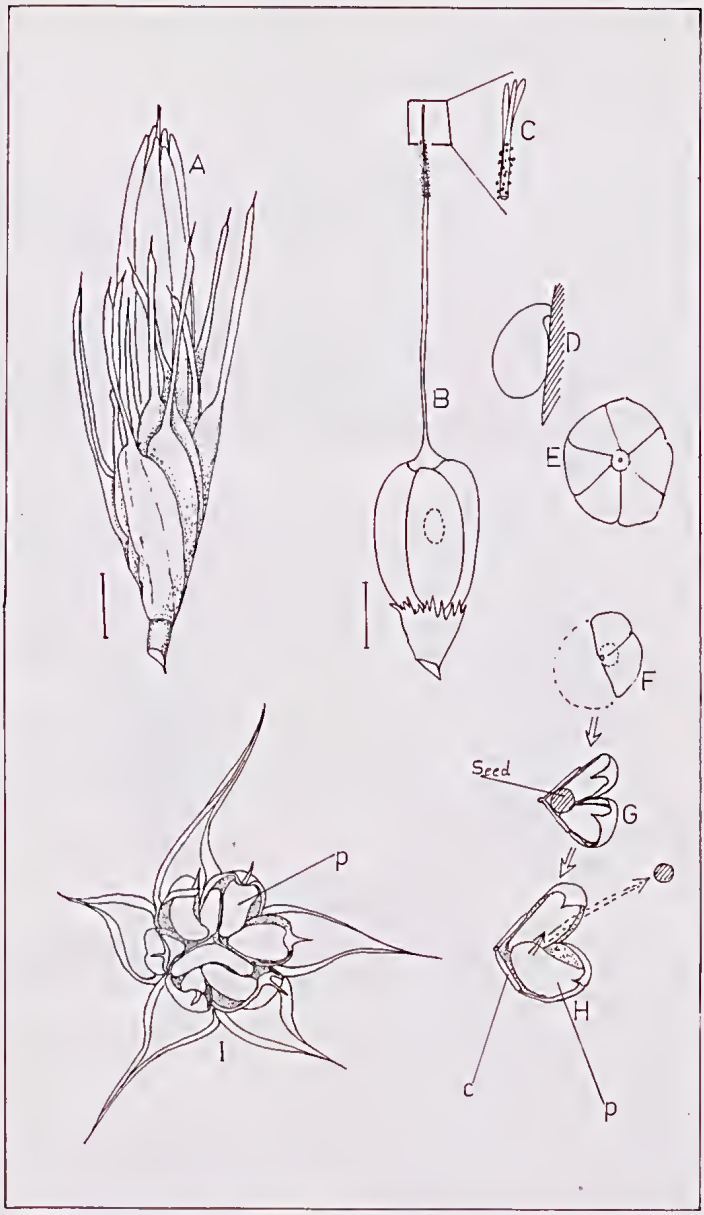

Figure 2: Flower and Fruit of *Baxteria australis*

A: Flower at anthesis with style protruding from centre of tepals, and surrounded by several bract like reduced leaves, scale bar = 5mm.
B: The gynoecium (dotted circle indicates an ovule), scale bar = 5mm.
C: Enlargement of stigma, showing pollen placement (dots). Pollen naturally placed in this position by dehiscence of anthers below stigma surface on inside of the three lobes.
D: Ovule - centrally attached to placenta.
E: Young fruit from above.
F: 1 carpel of mature fruit.
G: mature carpel just prior to release of endocarp plates.
H: Release of plates catapulting seed out of carpel. (p = plate, o - central ovary wall.)
I: mature dehisced fruit (p = plate). Tepals dry and twist, but points not as sharp as they appear here due to perspective.

days. Autogamy does not occur in the Albany population (Fig. 2b & c). Plants from Ruabon (near Busselton), however, are self fertile when manually selfed by their own pollen, (they are not autogamous).

VEGETATIVE REPRODUCTION

Spread is via a fire resistant rhizome, but it is very slow. The extent of vegetative reproduction is unknown but it is probably low.

SEED DISPERSAL

After pollination the flower remains intact. The tepals being held erect by the large amount of sclerenchyma, are further strengthened by the attached anther filaments (Fig. 1d). Once dried the flower forms what could be termed a "botanical cannon". The base remains attached to the ovary, which swells as the three seeds are formed.

When the seeds are mature the fruit begins to dehisce at six places, i.e. both at the septa (the septa remaining attached to the axis) and in the middle of the locules (Fig. 2e - 6 of these or 2 per carpel). The mature seed rests upon two carpel wall plates (Fig. 2g) held in place by the central ovary wall. As drying and opening of the fruit proceeds, the tension on these plates increases until it is suddenly released as they are pulled from under the edge of the persistent septa and central axis of the ovary. The seed is catapulted up to a metre out of the clump by this method (Fig. 2h).

Western Australian Liliaceae and Xanthorrhoeaceae have a wide variety of mechanisms of seed dispersal. Several are wind dispersed (*Calectasia*, *Borya* and to a degree *Xanthorrhoea*, *Kingia* and *Dasypogon*), many by gravity (*Agrostocrinum*, *Arthropodium*, *Bulbine*, *Burchardia*, *Chamaescilla*, *Chamaexeros*, *Laxmannia*, *Lomandra*, *Sowerbaea*, *Tricoryne* and Wurmbea) or by a combination of ants (they produce an elaisome) and gravity (*Hensmania*, *Johnsonia* and *Stawellia*). Rarely succulent fruits are produced (*Dianella*, *Stypandra*) which are eaten by animals and the seeds dispersed in their droppings.

Probably, other dispersal syndromes occur (e.g.: *Acanthocarpus* has spiny fruits which may attach to fur, but observations are lacking) and studies are needed on dispersal of any Australian plant by interested naturalists. However, *Baxteria* is unique in the Western Australian Liliaceae and Xanthorrhoeaceae in having active ballistochory (as defined by Pijl, 1972) as it's sole means of seed dispersal.

This observation adds another character to the already unique and isolated position of *Baxteria*, within the Liliflorae.

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NOTES ON A RARE WESTERN AUSTRALIAN SPIDER *CERYERDA* SYMON (GNAPHOSIDAE)

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In September 1974 I noticed a small spider about 2 mm long on my bedroom wall in Darlington. Although quite small, this spider was very conspicuous due to its rapid movements and spectacular colouration. During September, October and November 1974 several more of these spiders were seen. Their size gradually increased until a maximum body length of about 4 mm was reached in mid November. In November a male specimen was seen.